EVALUATION OF RHODE ISLAND'S FAMILY INDEPENDENCE PROGRAM*

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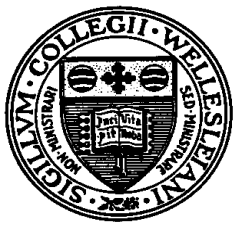
By

Ann Dryden Witte, Ph.D.
Magaly Queralt, Ph.D.
Wellesley College

And

Helen Tauchen, Ph.D.
University of North Carolina at Chapel Hill



Wellesley College
Department of Economics

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Evaluation of Rhode Island's Family Independence Program, May 1996-April 2000

ABSTRACT

We assess the impact of Rhode Island's Family Independence Program (FIP) on the employment and earnings of current and former cash assistance recipients. We use administrative data from many sources, including data from state cash assistance records and from employer reports of employment and earnings from the Unemployment Insurance program. Our data are for all-female-headed households receiving Rhode Island cash assistance during the period May 1996 to April 2000. In all we have observations on 29,253 families for an average of 16.6 quarters. We estimate our models using a number of techniques and find that the impacts of major variables are robust across the techniques used. Our results indicate that the major impact of FIP was to increase the likelihood that current and former cash assistance recipients would work. Our best estimate is that the impact of the many changes associated with FIP was to increase the likelihood of work by about 10%. Estimates also indicate that FIP increased the quarterly earnings of current and former cash assistance recipients. However, the estimated increase in quarterly earnings due to FIP was relatively modest (i.e., about $200 per quarter). During the study period, earnings increased substantially (i.e., from a little over $1,000 per quarter to over $2,500 per quarter), but our results indicate that most of this increase was due to increases in the Rhode Island minimum wage, not to FIP.

Key Words: *Welfare Reform, Child Care, Medicaid, Minimum Wage, Employment, and Earnings*

JEL Classification: *I38, H40, J22, I20*

After the enactment of the Family Independence Assistance Act (FIA) on August 2, 1996, human services programs in Rhode Island (RI) underwent major changes. Under the Family Independence Program (FIP), which took effect on May 1, 1997, Rhode Island implemented a broad range of new policies intended to provide a system of ongoing, individualized assistance and supports designed to help families make steady progress toward lasting economic self-sufficiency. RI's FIP is considered to be the most liberal welfare program in the New England area and among the most supportive programs nationwide (Francis & Anton, 1999). It has been recognized nationally for its innovation and quality.

FIP has generated dramatic changes in policies and programs on a number of fronts. In addition, Rhode Island (RI) has experienced other economic changes, including growth in overall employment (which has been experienced by much of the nation) and several increases in the state minimum wage. In order to understand the effects of FIP on the employment and earnings of low-income families in RI, the impacts of these more general economic effects must be separated from the effects of the changes in the state's social welfare programs. Building upon ongoing work in Massachusetts and Florida (Queralt, Witte, and Griesinger, 2000; Lemke, Witt, & Witte, 2001), we use econometric modeling to evaluate the impact of the FIP program in Rhode Island on the likelihood of employment and earnings of low-income families.

THE POLICY CONTEXT

In this section we discuss the many changes in policies, programs, and practices implemented as a result of the FIA, starting with those components that were put in effect in May 1997.

Policy Changes Implemented under FIP in May 1997

With the passage of the FIA, RI began a major revision of its welfare system. The first stage of the implementation of FIP in RI brought about changes in the eligibility rules for cash

support, in the job placement services provided, and in the time allowed on cash support. The most important of these changes are described below.

Increases in Income Disregards and Elimination of Time Limits on Income Disregards for Working Cash Assistance Beneficiaries

Beginning in May 1997, the amount of the income disregard for cash assistance became more generous than under the previous AFDC program.[1] FIP also eliminated the AFDC time limits on income disregards. Specifically, under FIP, working families receiving cash assistance are allowed to keep the first $170 of monthly earnings without facing any reduction in cash benefits. Beyond the first $170 of monthly earnings, and without any time limit, cash benefits are reduced $1 for every $2 earned (RI State Plan: Temporary Assistance for Needy Families [TANF]).[2] Thus, under FIP, beneficiaries who are working can exit the cash program gradually as their earnings increase.

Gross Income Test Eliminated

Another first-stage change in the RI cash assistance program is that the old AFDC gross income test was eliminated. The previous gross income test was the first eligibility standard to which applicants were subjected under the AFDC program. Under AFDC, families with gross income (i.e., income before disregards and other deductions) higher than 185% of the cash grant were declared ineligible. After FIP, the calculation for a working family coming on to the cash program is the same disregard calculation as for going off cash. Both of these provisions

[1] Under AFDC, working cash beneficiaries were allowed to retain the first $90 of earnings per month plus $30 and one-third of earnings over $90. This formula applied for the first four consecutive months of employment. For the next eight consecutive months, recipients were allowed to retain up to $120 before there was a reduction of benefits.

[2] Under FIP, non-working families receive a cash benefit of $327 per month for the first person, $122 per month for the second and $105 per month for each additional person (i.e., $6,648 per year for a family of three). In addition, there were two changes under FIP in the way in which cash benefits are determined. First, low-income families receiving subsidized housing have their cash assistance reduced by $50. Second, there have been slight changes in cash benefits for larger families. For example, the monthly cash benefits for a family of 5 with no other income increased from $710 to $715 and the monthly cash benefit for a family of 15 decreased from $1542 to $1514.

have meant that more families can come on cash and stay on cash longer. Thus, under FIP, the cash assistance program has become more of a support program for working families, providing them with a cash supplement to their wages. In fact, beginning in January 2000, working families can continue to receive the wage supplement indefinitely, as long as the parent works at least 30 hours per week (35 hours for a two-parent family) and the family income remains low enough to qualify (RI Department of Human Services, 2001).

Expansion in Number of Two-Parent Families Eligible for Cash Assistance

The old AFDC program served few two-parent families because at least one of the parents had to be unemployed or incapacitated in order for the family to qualify. In order to strengthen and support two-parent families, FIP made two-parent families eligible for cash assistance based on income (not unemployment or incapacity). This provision has resulted in a significant increase in the number of two-parent households receiving cash assistance, now about 6% of the caseload, although single-parent households continue to comprise the majority receiving cash assistance.

Job Placement and Retention

FIP established a new staff function in 1997, the Employment Placement and Retention Unit. This unit consists of six DHS Social Workers whose principal responsibilities are employment placement and retention as well as troubleshooting for working beneficiaries and employers, bureaucracy problem-solving, job development and replacement, job upgrading, and resolution of child care and transportation issues.

Lifetime 60-month Time Limits

FIP imposes on able adults under the age of 60 a lifetime 60-month time limit for the receipt of cash supplements. However, the cash assistance clock does not run for FIP families that are: a) exempt for disability of parent or child, b) headed by a minor teen, c) families where the adults are over the age of 59, or d) families under waiver for domestic violence.

Also, the FIP clock does not begin to tick until the family has had an assessment and has an employment plan (this is discussed further on in a separate section).

The FIP 60-month clock does not stop for able adults who are caring for a child, even when the child is under the age of one or for recipients in the last trimester of pregnancy. However, until the child is one year of age, they are exempt from the work requirement. In practice this means that women in their last trimester of pregnancy or parents with infants can choose to participate in an approved activity, but until the child is one year of age they won't be sanctioned if they don't. This exemption is different from the exemptions listed above (i.e., incapacity or age over 59) in that the others are not subject to the 60-month limit or to the work requirement. In contrast, the clock is ticking and lifetime months are accruing for those with a child under age one during their work-exemption period.

24-Months of Education and Training Activities

In general, FIP recipients may engage in educational or training activities for a maximum of 24 months "on the clock" after their employment plan is signed, regardless of their demographic profile (i.e., whether they are considered hard-to-serve or job ready). After that period of allowed education or training, non-exempt recipients must work (for pay or without pay) at least twenty hours per week in order to continue to receive benefits (RI State Plan: TANF). Activities counted toward the fulfillment of the work requirement include all those allowed under federal guidelines, in addition to a few that are not. For example, while other states disallow post-secondary education, RI gives this option to improve beneficiaries' chances of longer-term and higher-paying jobs.

Specifically, during the first 24 months of the employment plan recipients are required to fulfill their work requirement by participating in one of the following:

- 20 hours per week of paid employment (including on-the-job training and subsidized employment);

- 20 hours per week of community work experience;
- Training or work readiness program conducted on the job site and approved by DHS;
- During the first six months of eligibility, or longer if necessary, participation in an approved rapid job placement program:
    - Supervised individual job search;
    - Parents under the age of 20 without a secondary credential may participate on a full-time basis in a program to obtain a high school diploma or its equivalent;
    - Parents age 20 or older:
        - Literacy or English as a second language classes if needed;
        - Job skills training and/or vocational education;
        - Post secondary education that is likely to result in a job with high enough wages to make the family ineligible for cash assistance.

Sanctions

Cash beneficiaries who do not comply with education/training or work requirements are sanctioned. If a beneficiary does not comply with work requirements, as defined in her/his individual employment plan, the family grant is reduced by the parent's portion of the benefit, with the amount of reduction due to sanction increasing over time if the parent continues to fail to comply. Eventually, when the sanctioned parent's potential lifetime eligibility is exhausted (e.g., after 60 months), the child(ren)'s portion may be entrusted to an agency or individual other than the parent.[3]

Treatment of Minor Teens

After passage of the FIA in 1996, minor teens were required to live at home or in an adult-supervised setting. In addition, they were required to stay in school. This provision has reduced the number of teens in RI living on their own and getting cash benefits. In 1999 New Opportunity Homes were opened for minor teens with no place else to go.[4]

Other Changes in In-Kind Benefits to Cash Assistance Beneficiaries Associated with the Enactment of FIP in May 1997

Child Care

After the passage of FIP, child care services were taken out of the discretionary budget competition in RI and were made an entitlement for FIP families and other working families with incomes up to 185% of the federal poverty level (FPL). This meant that qualified FIP families in RI became entitled to receive payment for approved child care.[5] After leaving the cash-assistance program, income-eligible working families remain entitled to receive child care indefinitely, as long as they make a low co-payment. This is very different from most other states, where child care services are in competition with other programs in the discretionary budget for public services and transitional child care is offered on a time-limited basis.[6]

Because FIP made child care an entitlement, all who need it, qualify, and apply are entitled to receive it. This means that there can be no waiting lists for child care in RI. In addition, those exiting the cash assistance program remain eligible to receive child care indefinitely, as long as they are working and meet the income-eligibility test. To qualify for

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[3] The implementation of multiple-stage sanctions did not occur until the fall of 2001.

[4] Since the 1980's minor teenage mothers have been eligible to receive child care (as well as case management and counseling), regardless of income, for the purpose of finishing school.

[5] Families may also elect to receive income disregards of up to $200 per month for the care of children under the age of two and $175 per month for children ages 2 to 16.

[6] The child care entitlement in RI is handled through the same budget implementation process as the FIP cash benefits, SSI supplement benefits, and Medicaid funding. By state law, each year in November and in May, House and Senate fiscal staff and the State Budget Officer meet in public, hear testimony from economists, from the Department of Human Services (DHS), and from others and make public projections of caseload expenditures and revenues. Budget supplementals or rescissions are then enacted based on this process.

child care, FIP single parents must be working or must be engaged in approved activities for at least 20 hours per week. In order to qualify, two-parent FIP families must have one parent working or engaged in approved activities for a minimum of 35 hours per week and the other parent must also be working or engaged in approved activities for at least 20 hours. In the case of two-parent families, the number of hours of free child care that the state provides is the number of hours of activity overlap between the two parents.

Health Care

The FIA made every member of any family eligible for cash assistance *categorically* eligible to receive health care under RI's RIte Care program (RI General Laws, Chapter 40-5.1.19). In addition, the age upper limit for children eligible for RIte Care was expanded from age 8 to age 18 and the family income eligibility for the children to qualify for RIte Care was raised up to 250% of FPL. Children up to age 18 remain eligible for health care, without time limits, as long as the family income does not exceed 250% of the FPL (that is, up to $35,375 for a family of 3).[7] Pregnant women are covered under the RIte Care program, as long as the family income does not exceed 350% of the FPL (that is, up to $49,525 for a family of 3).[8] A household's resources are not considered when determining eligibility for pregnant women and children.

Additional FIP Changes Implemented After May 1997

Many human services policies, programs and practices associated with RI's FIP were changed or implemented after May 1997. In our multivariate econometric analysis, we represent these changes occurring after May 1997 by means of several variables. Two of the variables—the number of quarters since FIP implementation and the number of quarters since FIP implementation squared—represent the bundle of additional changes. Some of these

[7] In July 1999, all children up to age 19 (including undocumented aliens) became eligible to receive health care under the Rite Care program.

additional changes are also represented by means of individual variables, for example, the One=One variable (One Job Equals One Family Out of Poverty), the variable representing the November 1998 expansion of RIte care coverage to parents and other relative caretakers, and the variable representing the maximum provider reimbursement for full-time care of preschoolers. In this section we elaborate on these additional post-May 1997 changes or implementations.

FIP Plans

All families entering the FIP program are to be assessed to determine if they are hard-to-serve or job ready. All non-exempt recipients must develop an individual employment plan (IEP) of activities with the assistance of the social worker in charge of the case. Many families that applied for cash assistance after May 1997 received an employment plan shortly after they entered the program; however, those already on cash when FIP began received their IEPs gradually over the period May 1997 to May 1999.[9]

The employment plan, as described in Chapter 40-5.1 of the FIA, identifies the steps—education, job training, job search, part-time work or full-time work-- that the recipient will follow to become financially self-sufficient within the shortest practicable time (RI General Laws, DHS Chapter 40-5.1). All those who have an IEP must enroll in a work-related or educational activity delineated in the plan and must attend. Just over 70 social workers statewide manage the process of engaging and re-engaging in activities those FIP recipients who are non-exempt, in addition to assessing and planning and responding to the basic needs of all families.

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[8] In determining family size, pregnant women are counted as two people.

[9] Although the FIA stipulated that all FIP participants were to work out an Individual Employment Plan (IEP) within 45 days of the enactment of the law, in reality it was impossible to complete the task on time due to the lack of a sufficient number of caseworkers. This meant that for a substantial portion of cash recipients, their effective time limits under FIP are different from the federal time limits. Thus, when the federal clock begins to run out in 2001-2002 due to federal time limits, many recipients in RI will have a substantial amount of time left in their FIP 60-month clocks.

Changes in RIte Care after May 1997

In June 1998 the number of months of Transitional Medical Care (TMC) available under the RIte Care program were extended from 12 under AFDC/Jobs to 18 months. TMC or extended medical assistance is medical care made available after the individual loses eligibility on the basis of the rules for the RIte Care program.

In November 1998, RI became the first state to use Section 1931 (a new mandatory categorically needy Medicaid coverage group) to extend Medicaid eligibility to adult parents in all RI families with incomes up to 185% of the FPL. Eligibility is based strictly on family income and family size. For example, based on the year 2000 FPL, the adults in a family of three are eligible for health care as long as their income does not exceed 185% of the FPL (that is, up to $26,178 for a family of 3).

Since May 1999, re-determination of eligibility for health care under the RIte Care program takes place every 12 months, instead of more frequently as it was before.

Beginning in February 2001, DHS implemented the Rite Share Premium Assistance program, which subsidizes the costs of enrolling certain eligible Medical Assistance Families, pregnant women, and children under the age of 19 in employer sponsored insurance (ESI) health plans. In April 2001, enrollment in RIte Share premium assistance program became mandatory for families with an employer participating in the program.

Changes in Child Care after May 1997

As previously noted, child-care assistance is guaranteed to all income-eligible working families under the FIA, which went into effect on May 1, 1997. Under the Starting RIght program, enacted on June 25, 1998, the state's child care subsidy program underwent significant expansions.

The Starting RIght program helps eligible working parents to pay providers of their choice for the care of their children while they are at work. Under previous income guidelines,

eligibility for child care subsidies was limited to families earning up to 185% of the FPL. Under the Starting RIght program, in January 1999, eligibility for child care was increased from 185% to 200% of the FPL and the age of eligible children was increased to 14. In July 1999 eligibility was expanded again from 200% to 225% of the FPL and the age of eligible children was raised to 15. To give a concrete example of the eligibility expansions under RIght Care, for a family of three, the maximum income eligibility increased from $24,661 in May 1997 to $25,253 in May 1998, $30,713 in July 1999 and $31,230 by April 2000. In order to receive child care, families are required to make a co-payment. This co-payment depends upon family income and, in the period of our study, ranged from $0 to $48 per week for a family with one child in care.

Payments to Child Care Providers after FIP

Child care providers get regular increases in the payments (reimbursements) they receive from the state for providing subsidized child care. During the period of our study, there were payment increases in January and February 1998, in January 1999, in July 1999, and in January 2000. In July 1999, the maximum provider payment rates were set at the 75th percentile of the 1993 market rate survey, well below 1999 market prices. For some types of care, the January 2000 maximum provider payment rates were increased to the 75th percentile of the June 1998 market rate survey. Still, reimbursements after the January 2000 increases lagged behind market prices, but by a lesser amount than previously. To give an example of the rates paid after the January 2000 increase, licensed centers were paid $160 per week for infant/toddler care and $140 per week for preschool care; certified family child care homes were paid $125 per week for full-time care of infants, toddlers, and preschoolers; licensed before-school facilities were paid $50 per week and licensed after-school facilities were paid $67 per week.

THE SETTING – STATE OF RHODE ISLAND

Rhode Island, the smallest of the New England states, has a population of 1,048,319 according to the year 2000 Census (U.S. Census Bureau, 2001). The state occupies a small land area—1,045 square miles--and has a density of 1,003 persons per square mile. Compared to the US as a whole, which has a population density of 80 persons per square mile, Rhode Island is very densely populated (U.S. Census Bureau, Geography Division). Cities with the largest concentration of population in RI include Providence (16.6%), Warwick (8.2%), Cranston (7.6%), Pawtucket (7%), East Providence (4.6%), and Woonsocket (4.1%). Cities with the largest proportion of FIP recipients include Providence, Pawtucket, Woonsocket, Central Falls, and Newport. These last cities have been designated core cities and we consider possible differential impacts of FIP across them.

According to the 2000 Census, the RI population is 82% non-Hispanic/non-Latino white, 8.7% of Hispanic/Latino origin (of any race), 4.5% black or African American, and 2.3% Asian. American Indians, Alaska natives, native Hawaiians, and Pacific Islanders comprise less than 1% of the population (U.S. Census Bureau, 2000 Census). In contrast, of FIP beneficiaries for whom there is racial or ethnic background information in the DHS administrative files (approximately 86.6% of FIP beneficiaries), in April 2000 46.9% were white, 32.4% were Hispanic, 15.5% were black, and 5.1% were Asian or Pacific Islanders. Clearly, compared to the state population, there are disproportionate numbers of Hispanics, blacks and Asians receiving FIP benefits in RI. In fact, beginning in November 1998 over half of all FIP beneficiaries were members of a racial or ethnic minority group.

In 1997, the estimated poverty rate in RI for individuals of all ages was 11.2%, somewhat under the 13.3% poverty rate for the US population. For children, the poverty rate in RI in 1997 was 17.3%, compared to 19.9% poverty rate for children in the US population. However, poverty is highly concentrated in the core cities in RI, particularly in Providence, Central Falls, Woonsocket, and Newport. Census 2000 data on poverty at the city level have

not yet been released. The 1990 census revealed a poverty rate (among children under age 18) of 35% in Providence, 33% in Central Falls, 22% in Woonsocket, 21% in Newport, and 15.5% in Pawtucket (U.S. Census Bureau, 1990).

Median household income in 1997 in RI was $36,699, compared to $37,005 for the U.S. as a whole (U.S Bureau of the Census, 1997). Data from the 2000 census on the percent high school and college graduates among persons 25 years and over have not yet been released. In 1990 (U.S. Census Bureau, 1990 Census), 72.2% of the population 25 years and over in RI were high school graduates and 21.3% were college graduates. In contrast, in April 2000, only 43.6% of FIP heads of household had a high school education and only 13.6% had some education beyond high school.

THE DATA

To construct our longitudinal database of current and former cash assistance recipients in Rhode Island (RI), we began with the administrative records for cash assistance recipients of the RI Department of Human Services (DHS). DHS provided us with the monthly administrative records for all cash assistance recipients from May 1996 through April 2000.[10] To this data, we added quarterly earnings data from Unemployment Insurance (UI) records. This allowed us to examine the work and earnings of current and of former cash assistance recipients, both when they were receiving cash assistance and when they were not. Because the UI data is only available on a quarterly basis, our analysis dataset is quarterly.

For our analyses, we consider only single-parent households. Single parent household made up, on average, 76-81% of the total number of households receiving cash assistance during our study time period.

[10] We received no personal identifiers, such as names, street addresses or social security numbers. The RI DHS did all data matching, sending the data to us only with person numbers and case numbers as unique identifiers.

Table 1 contains descriptive statistics for this database and Table 2 contains descriptive statistics for those with earnings from establishments covered by Rhode Island's Unemployment Insurance records. As can be seen in these two tables, the typical current or former cash assistance recipient was a white 30-year-old woman who was not working, spoke English at home, had less than a high school education and two children, one of whom was between the ages of 3 and 5.

As can be seen at the bottom of Table 3, we use 486,547 quarters of data on 29,253 current and former cash assistance families to estimate our model for the likelihood of work. On average, we observe UI earnings for these people for 16.6 quarters. As noted at the bottom of Table 4, to estimate our model for earnings we use 123,001 quarters of data on 20,734 families, whose UI earnings we observe for an average of 5.9 quarters. As can be seen by comparing the numbers at the bottom of Table 3 and Table 4, the current and former cash assistance recipients in our sample work approximately 25 percent of the quarters we observe them. However, over 70% work at least some time during the study period.

EMPIRICAL MODEL

Our empirical model is a reduced-form model for the employment and earnings of current and former cash assistance recipients in our sample. To be specific, we have modeled the probability of work and earnings (denoted Y) as functions of Policy and Administrative changes related to the Family Independence Program (FIP) and to other related Policy and Administrative changes (PA), as well as to human capital and socio-demographic variables (HCSD), local labor market conditions (LM) and community characteristics (CC):

$$Y = f(FIP, PA, HCSD, LM, CC).$$

We represent changes related to FIP in three ways. First, we include a variable that is equal to zero when the AFDC program was in effect, equal to .67 for the second quarter of 1997 and equal to 1 beginning in the third quarter of 1997 (i.e., for the third quarter of 1997

and all subsequent quarters). Second, since many aspects of FIP were fully implemented after May of 1997, we also include a variable that is equal to zero when the AFDC program was in effect, equal to .67 in the quarter of FIP implementation and that increases by 1 in each subsequent quarter. Third, we also include the squared value of this FIP implementation variable to allow the impact of FIP to increase or decrease as the time since program adoption increases. In our models for the probability of work, we also include a set of variables that specify the DHS office that served the household.

To provide estimates of the effects of FIP, as distinguished from the effects of other policy changes, we need to control for any other important policy and administrative changes (PA) that occurred during the period of our study (May 1996 to April 2000) and that might impact the employment and earnings of current and former welfare recipients. To do this, we follow Eissa and Liebman (1996), Lemke, et al. (2001), Meyer and Rosenbaum (2001), Moffitt (1992) and Queralt, et al. (2000). Table 1 lists the policy variables included as explanatory variables in our estimation. To be specific, we include: a) a variable to reflect changes in the RI minimum wage; b) a variable reflecting the expansion of RIte Care coverage to adults/caretakers in families with incomes below 185% of FPL; c) a variable reflecting the fact that Earned Income Credit (EIC) payments are substantially larger for families with two or more children; d) a variable reflecting the implementation of RI's One Job Equals One Family Out of Poverty (One=One) program; and e) a variable representing the maximum reimbursement rate that RI pays for center-based care of preschoolers.

To control for local labor market conditions (LM), we include the average monthly change in employment rate, by township, for each quarter of our study. We also include a trend variable that will pick up omitted changes that occurred during the period of our study, such as other macroeconomic changes. In addition, we include the squared value of this trend variable to allow for the impact of these unmeasured effects to vary across time.

As can be seen in Table 1, our vector of Human Capital and Socio-Demographic (HCSD) variables includes: age, education, language, race and ethnicity of the recipient, number of persons in the home, the disability status of the household head and other household members and the age of the youngest child. Note that we have included separate variables for children that are of public school age. (See Blank, 1997; Eissa & Liebman, 1996; Harris, 1996; Kim & Mergoupis, 1997; Lemke, et al., 2001; Pavetti & Acs, 1997; and Queralt, et al., 2000 for reviews of the literature on socio-demographic factors affecting employment and earnings.) We control for Community Characteristics (CC) by including a series of community-specific binaries.

To avoid potential endogeneity, we created socio-demographic variables for current and former cash assistance recipients from the data available in the first month that we observe them receiving cash assistance. For example, variables related to the age of the youngest child and to the education of the household head are the values for these variables when the person first received cash assistance during the period May 1996 through April 2000. The only socio-demographic variables that were allowed to vary were those related to disability status (Number of Disabled Persons in Household & Head of Household is Disabled) and to age of the head of household. We felt that a strong case could be made that changes in these variables were not the direct result of decisions made by the household members and hence were not inextricably related (endogenous) to the likelihood that a household head would be working and the level of the household head's earnings.

ESTIMATION

As is well known, estimation of models using longitudinal data requires use of appropriate statistical methods.[11] In our application, where we observe families over time, we are concerned with unobservable family-specific attributes that may enter the probability of

[11] See Chamberlain (1984) or Greene (1997) for more detailed discussions of techniques for estimating models using longitudinal data.

work and earnings equations and thus affect the consistency of the estimation. The most commonly used estimators to account for unmeasured family-specific attributes when using longitudinal data are the fixed-effects and the random-effects estimators. The fixed-effects estimator requires that the unobservable-family specific effect be constant or fixed over time. This estimator requires few other assumptions, but it is not efficient because it does not utilize time-invariant information. Also, as noted by Green (1997), fixed-effects results strictly apply to the estimation sample and cannot be generalized to other samples.

By way of contrast, random-effects estimators use all the information contained in both the time series and cross sectional variation in the data and, thus, produce more statistically efficient results than the fixed-effects estimator. Due to the stochastic nature of the family-specific effect, generalization to samples other than the estimation sample rests on firmer ground (Green, 1997). For consistency, the random-effects estimator requires that included regressors be uncorrelated with the family-specific effect, which is relegated to the error term. Since we are estimating a reduced form model, explanatory variables should be uncorrelated with the family-specific random effect and the random effects estimator should be consistent. We use standard errors that are robust to heteroskedasticity.

To be more specific, consider the General Estimating Equation (GEE):[12]

$$g(E(y_{it})) = x_{it}\beta, \qquad y_{it} \sim F \text{ with parameters } \theta_{it}$$

where y_{it} is the dependent variable (i.e., the probability of work or quarterly earnings of FIP recipients) that varies both across households (subscripted i) and time (subscripted t), x_{it} is a vector of explanatory variables (i.e., the explanatory variables listed in Table 1), β and θ_{it} are a vector and a matrix, respectively, of parameters to be estimated, g() is the "link" function, E is the expected value operator, and F is a distribution that is a member of the exponential family (e.g., the normal distribution, the gamma distribution).

To estimate the model for the earnings of FIP households, we use the following

specification of GEE:

$$E(earnings_{it}) = x_{it}\beta, \qquad earnings_{it} \sim N(\mu_y, \sigma_{it})$$

where x_{it} represents the explanatory variables listed in Table 4 and N indicates the normal distribution with a mean equal to μ_y and a variance/covariance matrix equal to σ_{it}. Note that we have specified the link function as linear in earnings, our dependent variable, and we have assumed that earnings for those working, conditional on the explanatory variables, are normally distributed. The fixed-effects model assumes that σ_{it} is a diagonal matrix. The random-effects model assumes that σ_{it} is a block diagonal matrix with symmetric, family-specific Ti x Ti matrices on the diagonal. The Ti x Ti matrices have constant covariance parameters off the diagonal and a family-specific variance on the diagonal.

To estimate the model for whether or not a child-care subsidy clients works, we use the following specification of the GEE:

$$logit(y_{it}) = x_{it}\beta, \qquad y_{it} \sim Bernoulli$$

where y_{it} is a binary variable equal to one when the FIP head of household works and equal to zero if the individual is not working and x_{it} is the list of explanatory variables given in Table 3. Again, the fixed-effects model assumes a family-specific fixed effect and the random-effect model assumes that the family-specific effect is random.[13]

An additional issue when estimating models for earnings is the possibility of "sample selection" bias. To test for sample selection bias in the earning results, we use a two-step procedure developed by Heckman (1979).

WHAT IMPACT DOES FIP HAVE ON EMPLOYMENT AND EARNINGS

We find strong and consistent evidence that both the likelihood that current and former cash assistance recipients will work and their level of earnings are higher under FIP than under AFDC. Further, our results indicate that the impact of FIP increased through time. These results

[12] For a discussion of GEE, see Liang and Zeger (1986), Zeger and Liang (1986), and Liang, Zeger and Quqish (1992).

[13] To estimate the fixed-effects model for the probability of work, we use the conditional logit model. See Chapter 19 of Green (1997) for a discussion.

are robust to a number of changes in specification and are present for all five core cities, as well as for the state as a whole (see Tables 5 and 6).

The conclusions regarding the impact of FIP are conservative. That is, we present estimates of the impact of FIP that are the smallest we obtain. This means that the results we present in this section are more likely to underestimate rather than overestimate the impact of the full set of policy changes that occurred between May 1997 and April 2000.

Estimation of the magnitude of results requires some care because of the high level of interrelationship between the variables designed to reflect the impact of the major policy changes initiated in May of 1997, the trend variables, and variables representing policy changes subsequent to May 1997. At this point, we are most comfortable estimating the joint impact of all these changes.

Figure 1 contains the estimated probability of work for the median Rhode Island household receiving cash assistance in the third quarter of 1998. The median RI household is headed by a white, able-bodied, English-speaking female living in Providence with two children, the youngest of whom is a preschooler. The household is served by the Providence DHS office. The simulation in Figure 1 holds the rate of employment at the average for 1997.

As can be seen in Figure 1, the likelihood of employment for the median cash assistance recipient increases from 20% in the second quarter of 1996 to 36% in the second quarter of 2000. At this time, we are unable to sort out all of the impacts on the probability of work (shown in Figure 1) of the many policy changes that occurred during the course of welfare reform in RI. We can say, however, that the average impact of the changes that occurred in May 1997 was to increase the likelihood of employment from 21% to 24%. The rest of the estimated increase in employment (up to 36%) comes from the joint effect of: (1) the implementation of those aspects of FIP that occurred after May 1997 (e.g., the development of FIP plans), and (2) the implementation of the One=One program during the first quarter of

2000.[14] Based on our work to date, we believe that the increase in the likelihood of work from 29% in the third quarter of 1997 to 37% in the third quarter of 1999 was due to the gradual implementation of FIP over this time period.

To examine the impact of FIP and other policy changes on the five core cities and on the balance of the state, we estimated the likelihood of employment for a household with the mean characteristics of current and former cash assistance recipients residing in each of the state sub-areas. The results are depicted in Figure 3. As can be seen in Figure 3, from May 1996 to April 2000, the percentage increase in the likelihood of work was highest in Central Falls (from 13% to 23%) and Balance of the State (from 19% to 32%), an increase of almost 70% in both areas. Providence also shows a large increase in the probability of work, specifically from 20% to 31% (a 59% increase). Increases in the likelihood of work were more modest in Woonsocket (43% increase from 20% to 29%) and Newport (44% increase from 27% to 39%).

Figure 2 contains the estimated wage trajectory for the median Rhode Island household receiving cash assistance in the third quarter of 1998. As noted above, this median statewide household is headed by a white, able-bodied, English-speaking female living in Providence with two children, the youngest of whom is a preschooler. The Providence DHS office serves the household. The simulation in Figure 2 holds the rate of employment growth at the average level for 1997. As can be seen in Figure 2, the quarterly earnings for the median RI family increase

[14] It should be noted that these predicted probabilities of work also do not control for increases in the minimum wage in Rhode Island, the expansion of RIte Care to adults, the increases in child care reimbursement rates or the expansion in income-eligibility for child care subsidies during the study period. Given the level of earnings of current and former cash assistance recipients (well below the maximum income-eligibility for child care subsides), we feel that it is unlikely that the expansion of income-eligibility for child care subsidies would have affected either the likelihood of work or the earnings of this group. Results in Tables 3-6 indicate that neither the expansion of RIte Care to adults nor the increase in child care reimbursement rates had a significantly positive effect on the probability of work. Results in Tables 3 & 4 indicate that increases in the minimum wage were associated with increases in the likelihood of employment. However, economic theory and most empirical studies indicate that increases in the minimum wage will lead to decreases in the availability of entry-level jobs. Hence, we feel that increases in the minimum wage can explain little of the change in the likelihood of work that we observe in Figure 1.

from a little over $1,100 per quarter in the second quarter of 1996 to over $2,500 per quarter in the second quarter of 2000. As for the likelihood of work, we cannot sort out the relative impacts of the various policy changes that occurred during this time period. We can say that the average impact of the changes that occurred in May 1997 was to increase earnings of the median household head by $95 per quarter. The rest of the estimated increase in earnings comes from the joint effect of: (1) the implementation of FIP that occurred after May 1997 (e.g., the development of FIP plans), (2) increases in the Rhode Island minimum wage and (3) the implementation of the One=One program during the first quarter of 2000.[15] Our estimates in Table 4 indicate that minimum wage increases in RI increased the mean earnings of current and former cash assistance recipients in our sample by an estimated $563 per quarter. Thus, of the estimated $631 increase in estimated earnings for the median household head between the third quarter of 1997 and the third quarter of 1999, we believe that approximately $68 can be attributed to the implementation of FIP. Overall, our results suggest that the implementation of FIP had a larger impact on the probability of work than on earnings. However, it had a positive impact on both.

To examine the impact of FIP and other policy changes on the five core cities and the balance of the state, we estimated the earnings of a household with the mean characteristics of current and former cash assistance recipients residing in each area. The results are depicted in Figure 4. As can be seen in Figure 4, we observe increases in earnings for the mean household in each of the sub-areas of the state. The percentage increase in earnings was highest in Central Falls (from $912 to $2,197 per quarter) and in the Balance of the State (from $1,159 to

[15] It should be noted that these predicted earnings also do not control for the increases in the Rhode Island minimum wage, the expansion of RIte Care to adults, the increases in child care reimbursement rates or expansion in the income-eligibility for child care subsidies during the study period. Given the level of earnings (well below the maximum income-eligibility for child care subsides) of members of current and former cash assistance recipients, we feel that it is unlikely that the expansion of income-eligibility for child care subsidies would have affected either the likelihood of work or the earnings

$2,675 per quarter). Earnings more than doubled in these two areas during the period of our study. The estimated earnings increases were more moderate in Providence (from $1,590 to $2,494) and in Pawtucket (from $1,698 to $2,453). In both these areas increases were approximately 50%. Newport and Woonsocket fell somewhere in the middle. Newport's increase in quarterly earnings was 91% (from $1,438 to $2,742). Woonsocket's increase was 80% (from $1,264 to $2,271).

RESULTS FOR OTHER POLICY AND ADMINISTRATIVE VARIABLES

As can be seen in Table 3, the DHS office serving a particular client has a significant impact on the probability that such individual will work.[16] To be specific, we found that clients served by DHS offices outside the core cities (e.g., Coventry, Cranston, East Providence) were more likely to be working than clients served by core-city DHS offices, holding all other variables listed in Table 3 constant. For example, on average, the estimated probability of work for a single-parent household head living outside the core cities was 27% if served by the Providence DHS office and 23% if served by the Pawtucket DHS office, while the probably of work for such individuals would be 31% if served by a DHS office outside the core cities.

We cannot separate the effect of residence in Newport or Woonsocket from the effect of being served by the Newport or Woonsocket DHS office because virtually all clients in Newport and all clients in Woonsocket are served by the local DHS office in the area where they reside. We can say that current and former cash assistance recipients that reside in Woonsocket and are served by the Woonsocket DHS office have probabilities of work that are lower than clients residing in the Balance of the State and served by DHS offices outside the core cities. Note that we are not able to extract the independent effect of living in Woonsocket (including having poor transportation) from the effect of being served by the Woonsocket DHS office because the data

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of this group. Results in Tables 4 & 6 indicate that neither the expansion of RIte Care to adults nor the increase in child care reimbursement rates had a significantly positive effect on earnings.

lacks the necessary variability to make that determination (i.e., everybody who lives in Woonsocket happens to be served by the Woonsocket office). Our results in no way point to any deficiency in the Woonsocket office. They just indicate that being a low-income single parent living in Woonsocket is associated with lower probabilities of work.

To discern the impact of the Earned Income Tax Credit (EIC), we included a binary variable that is equal to 1 when a family has two or more children and hence will receive a higher earned income credit if family members work. Our results indicate that higher EIC payments increase the probability of work, but only by about 1 percent. For example, we estimated that the RI median cash assistance recipient with fewer than 2 children would have an estimated probability of work of 36% in the second quarter of 2000, while a family with two or more children (and a higher EIC payment) had an estimated probability of work of 37% in the second quarter of 2000. We find no consistent evidence that the EIC had a significant impact on earnings (see Table 4).

Our results regarding the impact of Rhode Island's One Job Equals One Family Out of Poverty Program (One=One variable) are provocative, but can in no way be considered definitive. The results reported in Table 3 & Table 4 indicate that the One=One program significantly increased the likelihood that a current or former cash assistance recipient would work and markedly increased the earnings of such families (estimated $1,388 per quarter). However, we observe families subject to the One=One program for only four months. Given the strong seasonality in the Rhode Island economy (see Figure 5), more definitive evaluation of the impacts of the One=One program will require at least a year of data during which other major policies impacting employment and earnings are relatively stable.

Because changes in the remaining policy and administrative variables only occur over time, we are not able to effectively sort out the effect of these variables from the effects of FIP

[16] We did not find that the DHS office had a significant effect on earnings.

and other time factors. In order to sort out the effect of these policies, we need variations in the specific policies, either variation across individuals or across geographic areas. That is, we require variables that will not be highly correlated with the FIP implementation variables and the time trend.

EFFECT OF OTHER VARIABLES

Overall, our results indicate that single parents who are older, who are black, who are able-bodied, who are English-speaking, who have high school degrees, who have smaller households, who have no disabled members in the household, and who do not have U.S. citizenship have a higher likelihood of work than current and former cash assistance recipients with other characteristics.[17] Our results indicate that quarterly earnings will be higher for parents who are older, who are Asian or white, who are able-bodied, who have a high school education, who speak a language other than Spanish or English at home, who are not U.S. citizens, and who have smaller families. For example, we estimate that single parent household heads with a high school education will earn approximately $126 more per quarter than those without a high school education.

We find that higher rates of employment growth in the township where the current and former cash assistance recipient lives are associated with higher probabilities of working and higher earnings. However, the magnitude of the effect is small.

Figure 5 shows the average quarter-to-quarter change in the number of people employed in Providence. As can be seen in Figure 5, employment growth in Rhode Island is highly cyclical, and this may have implications for DHS, RIDE and Department of Labor policies.

All other things equal, current and former cash assistance recipients that reside in Central Falls, Newport, Providence, or Pawtucket have higher probabilities of work than do

clients that reside outside the core cities or in Woonsocket. In contrast, all other things equal, current and former cash assistance recipients residing outside the core cities or in Newport have significantly higher earnings than those that reside in the core cities of Central Falls, Pawtucket, Providence or Woonsocket. The results indicate that current and former cash assistance recipients residing in Central Falls and Woonsocket have particularly low earnings.

CONCLUSIONS AND SUGGESTIONS FOR FURTHER WORK

Our work to date provides consistent support for the contention that the Family Independence Program (FIP) had a large and significant impact on the likelihood that current and former cash assistance recipients in Rhode Island would work. The average impact of the FIP policies initiated in May 1997 on the probability of work was of only moderate size (an estimated increase from 21% to 24%). The gradual implementation of FIP policies had a much larger impact. At this point, our best estimate is that the gradual implementation of FIP between the third quarter of 1997 and the third quarter of 1999 increased the probability of employment of the typical cash assistance recipient from 29% to 37%. We have tried to be conservative in our estimates. Consequently, our results may underestimate the impact of the full set of policy changes associated with the enactment of FIP and occurring during the period of our study (May 1997 to April 2000).

Our work also indicates that FIP had a positive and significant impact on the quarterly earnings of the typical current and former cash assistance recipient. We estimate that the average impact on earnings of the FIP policies initiated in May 1997 was to increase earnings by approximately $100 per quarter. At this point, our best estimate is that the gradual implementation of FIP between the third quarter of 1997 and the third quarter of 1999 increased the quarterly earnings of the median cash assistance recipient by between $50 and

[17] Note that we do not discuss the impact of the age of the youngest child in this section. We are not satisfied with the way in which we have handled the age of the children in the family and will do

$100 per quarter. Overall, FIP appears to have increase earnings by approximately $200 per quarter.

The overall increase in quarterly earnings during the study period was much larger (from a little over $1,000 per quarter to over $2,500 per quarter). Results to date indicate that most of this overall increase occurred as a result of the gradual increase in the minimum wage from $4.45 per hour to $5.65 per hour during the study period.

It is not possible to further sort out the impacts of the various policy changes that occurred during the study period. This would require data on variations in the specific policies either across individuals or across geographic areas.

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further work in this area. Hence, discussion of current results does not seem worthwhile.

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Table 1
State of Rhode Island
Descriptive Statistics for Current and Former Single-Parent Welfare Families
Study Period: May 1996 to April 2000

Variable	Median	Mean	Standard Deviation	Coefficient of Variation
DEPENDENT VARIABLE:				
Binary Indicating Whether Recipient Is Working	0.00	0.25	0.43	1.73
EXPLANATORY VARIABLES:				
Policy & Administrative Variables				
FIP Implementation Var=1 Beginning 3rd qtr 1997, =.67 2nd qtr 1997, =0 Before	1.00	0.75	0.42	0.56
Number of Quarters since FIP Implementation	4.67	5.10	4.32	0.85
Client Served by DHS' Newport Office	0.00	0.05	0.22	4.30
Client Served by DHS' Pawtucket Office	0.00	0.17	0.37	2.24
Client Served by DHS' Providence Office	0.00	0.38	0.49	1.27
Other Policy & Administrative Variables:				
Rhode Island Minimum Wage (in $)	5.15	5.17	0.34	0.07
Binary=1 beginning Jan. 2000--One=One Implementation	0.00	0.12	0.32	2.74
Binary=1 beginning Nov. 1998--RIte Care Coverage for Adults	0.00	0.39	0.47	1.21
Binary=1 if 2 or more children--Higher Earned Income Credit	0.00	0.49	0.50	1.01
Max State Reimbursement (in $) for wkly Full-Time Care of Preschooler	84.00	89.29	20.49	0.23
Human Capital and Socio-Demographic:				
Binary=1 if Household Head Has 12 or More Years of Education	0.00	0.44	0.50	1.14
Age of Household Head	30.12	30.97	8.61	0.28
Household language is English	1.00	0.84	0.37	0.44
Household language is Spanish	0.00	0.13	0.34	2.54
Asian	0.00	0.03	0.17	5.72
Black	0.00	0.13	0.33	2.61
Hispanic	0.00	0.24	0.43	1.78
White	1.00	0.54	0.50	0.93
Binary=1 if Youngest Child is <1 Year Old	0.00	0.15	0.36	2.35
Binary=1 if Youngest Child is 1 to 3 Years Old	0.00	0.24	0.43	1.76
Youngest child 5 years old--Kindergarten Eligible	0.00	0.06	0.25	3.81
Youngest child 6-12 years old--Elementary School Age	0.00	0.25	0.44	1.71
Youngest child 13-17 years old--Middle & Secondary School Age	0.00	0.09	0.28	3.27
Number of Disabled Persons in Household	0.00	0.08	0.30	3.73
Head of Household Is Disabled	0.00	0.01	0.07	12.58

Variable	Median	Mean	Standard Deviation	Coefficient of Variation
Head of Household Is Not a US Citizen	0.00	0.13	0.33	2.61
Household Size	2.00	2.77	1.07	0.39
Local Labor Market Conditions:				
Average Monthly Change in Number Employed During the Quarter (%)	0.28	0.14	0.97	7.13
Time Trends:				
Time Trend Variable Ranging from 1 in 2nd Qtr 1996 to 17 in 2nd Qtr 2000	13.00	9.00	4.90	0.54
Core Communities:				
Client resides in Central Falls	0.00	0.05	0.21	4.44
Client resides in Newport	0.00	0.03	0.18	5.38
Client resides in Pawtucket	0.00	0.11	0.32	2.79
Client resides in Providence	0.00	0.38	0.48	1.29
Client resides in Woonsocket	0.00	0.08	0.27	3.41

Table 2
State of Rhode Island
Descriptive Statistics for Current and Former Single-Parent Welfare Families with Earnings
Earnings from Unemployment Insurance (UI) Records
Study Period: May 1996 to April 2000

Variable	Median	Mean	Standard Deviation	Coefficient of Variation
DEPENDENT VARIABLE:				
Quarterly Earnings of Recipient (in $) according to UI Records	1767.00	2111.48	1728.34	0.82
EXPLANATORY VARIABLES:				
Policy & Administrative Variables				
FIP Implementation Var=1 Beginning 3rd qtr 1997, =.67 2nd qtr 1997, =0 Before	1.00	0.81	0.38	0.46
Number of Quarters since FIP Implementation	5.67	5.88	4.32	0.73
Client Served by DHS' Newport Office	0.00	0.06	0.24	3.85
Client Served by DHS' Pawtucket Office	0.00	0.16	0.36	2.31
Client Served by DHS' Providence Office	0.00	0.37	0.48	1.32
Other Policy & Administrative Variables:				
Rhode Island Minimum Wage (in $)	5.15	5.23	0.33	0.06
Binary=1 beginning Jan. 2000--One=One Implementation	0.00	0.15	0.35	2.41
Binary=1 beginning Nov. 1998--RIte Care Coverage for Adults	1.00	0.51	0.50	0.98
Binary=1 if 2 or more children--Higher Earned Income Credit	0.00	0.47	0.48	1.04
Max State Reimbursement (in $) for wkly Full-Time Care of Preschooler	84.00	92.23	21.72	0.24
Human Capital and Socio-Demographic:				
Binary=1 if Household Head Has 12 or More Years of Education	0.00	0.49	0.50	1.01
Age of Household Head	30.02	30.87	7.56	0.24
Household language is English	1.00	0.89	0.31	0.35
Household language is Spanish	0.00	0.09	0.29	3.11
Asian	0.00	0.01	0.10	9.75
Black	0.00	0.16	0.36	2.31
Hispanic	0.00	0.21	0.41	1.95
White	1.00	0.57	0.49	0.86
Binary=1 if Youngest Child is <1 Year Old	0.00	0.15	0.35	2.40
Binary=1 if Youngest Child is 1 to 3 Years Old	0.00	0.25	0.43	1.73
Youngest child 5 years old--Kindergarten Eligible	0.00	0.07	0.26	3.63
Youngest child 6-12 years old--Elementary School Age	0.00	0.27	0.45	1.63

Variable	Median	Mean	Standard Deviation	Coefficient of Variation
Youngest child 13-17 years old--Middle & Secondary School Age	0.00	0.06	0.24	3.86
Number of Disabled Persons in Household	0.00	0.05	0.24	4.54
Head of Household Is Disabled	0.00	0.00	0.04	18.11
Head of Household Is Not a US Citizen	0.00	0.11	0.31	2.89
Household Size	3.00	2.79	1.00	0.36
Local Labor Market Conditions:				
Average Monthly Change in Number Employed During the Quarter (%)	0.28	0.12	1.04	8.42
Time Trend:				
Time Trend Variable =1 in 2nd Qtr 1996 and =17 in 2nd Qtr 2000	10.00	9.91	4.78	0.48
Core Communities:				
Client resides in Central Falls	0.00	0.04	0.20	4.92
Client resides in Newport	0.00	0.04	0.21	4.62
Client resides in Pawtucket	0.00	0.12	0.32	2.77
Client resides in Providence	0.00	0.36	0.48	1.33
Client resides in Woonsocket	0.00	0.06	0.24	4.00

Table 3
State of Rhode Island
Results for Likelihood of Employment of Current and Former Single-Parent Welfare Families
Study Period: May 1996 to April 2000

Explanatory Variables	Random Effects		Fixed Effects	
	Coef.	P>|z|	Coef.	P>|z|
Policy & Administrative Variables Associated with the Family Independence Program:				
FIP Implementation Var=1 Beginning 3rd qtr 1997, =.67 2nd qtr 1997, =0 Before	0.35	0.00	0.52	0.00
Number of Quarters since FIP Implementation	0.53	0.00	0.82	0.00
Number of Quarters since FIP Implementation squared	0.11	0.00	0.17	0.00
Client Served by DHS' Newport Office	-0.08	0.25		
Client Served by DHS' Pawtucket Office	-0.41	0.00		
Client Served by DHS' Providence Office	-0.20	0.02		
Other Policy & Administrative Variables:				
Rhode Island Minimum Wage	0.53	0.00	0.83	0.00
Binary=1 beginning Jan. 2000--One=One Implementation	0.42	0.00	0.64	0.00
Binary=1 beginning Nov. 1998--RIte Care Coverage for Adults	0.02	0.27	0.04	0.19
Binary=1 if 2 or more children--Higher Earned Income Credit	0.04	0.17		
Max State Reimbursement for Full-Time Care of Preschooler	-0.01	0.00	-0.02	0.00
Human Capital and Socio-Demographic:				
Binary=1 if Household Head Has 12 or More Years of Education	0.18	0.00		
Age of Household Head	0.28	0.00	0.38	0.04
Age of Household Head Squared	0.00	0.00	-0.01	0.00
Household language is English	0.24	0.01		
Household language is Spanish	-0.23	0.02		
Asian	-0.84	0.00		
Black	0.52	0.00		
Hispanic	0.33	0.00		
White	0.28	0.00		
Binary=1 if Youngest Child is <1 Year Old	0.12	0.00		
Binary=1 if Youngest Child is 1 to 3 Year Old	0.06	0.03		
Youngest child 5 years old--Kindergarten Eligible	-0.04	0.39		
Youngest child 6-12 years old--Elementary School Age	0.05	0.06		
Youngest child 13-17 years old--Middle & Secondary School Age	-0.23	0.00		

Explanatory Variables	Random Effects		Fixed Effects	
	Coef.	P>|z|	Coef.	P>|z|
Number of Disabled Persons in Household	-0.43	0.00	-0.65	0.00
Head of Household Is Disabled	-0.25	0.00	-0.32	0.00
Head of Household Is Not a US Citizen	0.15	0.00		
Household Size	-0.07	0.00		
Local Labor Market Conditions:				
Average Monthly Change in Number Employed During the Quarter (%)	0.01	0.00	0.02	0.00
Time Trends:				
Time Trend Variable =1 in 2nd Qtr 1996 and =17 in 2nd Qtr 2000	0.51	0.00	0.87	0.00
Squared Value of Time Trend	-0.11	0.00	-0.17	0.00
Core Communities:				
Client resides in Central Falls	0.19	0.06		
Client resides in Newport	0.40	0.00		
Client resides in Pawtucket	0.36	0.00		
Client resides in Providence	0.18	0.03		
Client resides in Woonsocket	-0.45	0.00		
Constant	-7.83	0.00		
Test for Significance of Model	$\chi^{2\,(37)}$	5346.84	$\chi^{2\,(14)}$	12958.73
	$P>\chi^2$	0.00	$P>\chi^2$	0.00
Sample Characteristics				
Number of Quarters	486547		341285	
Number of Families	29253		20080	
Minimum Number of Quarters per Family	1		15	
Average Number of Quarters per Family	16.6		17	
Maximum Number of Quarters per Family	17		17	

Table 4
Results for Quarterly Earnings of Current and Former Single-Parent Welfare Families
Earnings from Unemployment Insurance (UI) Records

Explanatory Variables	Traditional Random Efffects		Fixed Effects		Heckman Correction for Sample Selection	
	Coef.	P>|z|	Coef.	P>|z|	Coef.	P>|z|
Policy & Administrative Variables Associated with the Family Independence Program:						
FIP Implementation Var=1 Beginning 3rd qtr 1997, =.67 2nd qtr 1997, =0 Before	37.68	0.25	61.46	0.09	91.12	0.15
Number of Quarters since FIP Implementation	438.56	0.00	473.59	0.00	430.03	0.00
Number of Quarters since FIP Implementation squared	66.73	0.00	74.85	0.00	76.58	0.00
Other Policy & Administrative Variables:						
Rhode Island Minimum Wage	563.29	0.00	594.99	0.00	562.65	0.00
Binary=1 beginning Jan. 2000--One=One Implementation	1388.32	0.00	1477.56	0.00	1167.30	0.00
Binary=1 beginning Nov. 1998--RIte Care Coverage for Adults	-62.71	0.01	-70.98	0.00	-55.96	0.09
Binary=1 if 2 or more children--Higher Earned Income Credit	3.74	0.90			86.07	0.00
Max State Reimbursement for Full-Time Care of Preschooler	-41.00	0.00	-43.94	0.00	-34.37	0.00
Human Capital and Socio-Demographic:						
Binary=1 if Household Head Has 12 or More Years of Education	126.19	0.00			184.58	0.00
Age of Household Head	198.85	0.00	671.12	0.00	176.76	0.00
Age of Household Head Squared	-2.49	0.00	-1.85	0.00	-2.34	0.00
Household language is English	-191.99	0.02			-36.71	0.52
Household language is Spanish	-632.24	0.00			-613.97	0.00
Asian	275.57	0.00			29.12	0.78
Black	184.14	0.00			332.56	0.00
Hispanic	157.11	0.00			254.92	0.00
White	202.78	0.00			241.37	0.00
Binary=1 if Youngest Child is <1 Year Old	75.80	0.01			72.67	0.00
Binary=1 if Youngest Child is 1 to 3 Year Old	62.00	0.02			74.56	0.00
Youngest child 5 years old--Kindergarten Eligible	109.86	0.01			137.85	0.00
Youngest child 6-12 years old--Elementary School Age	25.18	0.41			60.42	0.05
Youngest child 13-17 years old--Middle & Secondary School Age	-92.90	0.04			-147.32	0.00
Number of Disabled Persons in Household	-169.89	0.00	-100.55	0.02	-349.17	0.00
Head of Household Is Disabled	-1009.11	0.00	-967.60	0.00	-1539.53	0.00
Head of Household Is Not a US Citizen	140.56	0.00			172.74	0.00

Explanatory Variables	Traditional Random Effects		Fixed Effects		Heckman Correction for Sample Selection	
	Coef.	P>|z|	Coef.	P>|z|	Coef.	P>|z|
Household Size	-76.70	0.00			-49.18	0.00
Local Labor Market Conditions:						
Average Monthly Change in Number Employed During the Quarter (%)	-0.76	0.85	0.42	0.92	-0.89	0.88
Time Trend:						
Time Trend Variable =1 in 2nd Qtr 1996 and =17 in 2nd Qtr 2000	287.48	0.00	197.30	0.00	381.97	0.00
Squared Value of Time Trend	-65.02	0.00	-72.42	0.00	-76.23	0.00
Core Communities:						
Client resides in Central Falls	-227.91	0.00			-221.36	0.00
Client resides in Newport	-29.09	0.52			70.59	0.10
Client resides in Pawtucket	-63.65	0.04			-20.40	0.28
Client resides in Providence	-121.98	0.00			-80.46	0.00
Client resides in Woonsocket	-204.15	0.00			-274.43	0.00
Constant	-1995.32	0.00	-15987.04	0.00	-3150.19	0.00
Test for Selection Bias--Mill's Lambda					705.78	0.01
Test for Significance of Models	$\chi^{2\,(34)}$	6047.66	$F_{(14,102253)}$	964.68	$\chi^{2\,(67)}$	22695.92
	$P>\chi^2$	0.00	P>F	0.00	$P>\chi^2$	0.00
Sample Characteristics						
Number of Quarters	123001		123001		Censored	363546
Number of Families	20734		20734		Uncensored	123001
Minimum Number of Quarters per Family	1		1			1
Average Number of Quarters per Family	5.9		6			6
Maximum Number of Quarters per Family	17		17			17

Table 5
Sub-State Areas in Rhode Island
Results for Likelihood of Employment of Current and Former Single-Parent Welfare Families
Study Period: May 1996 to April 2000

Explanatory Variables	Random Effects											
	Central Falls		Newport		Pawtucket		Providence		Woonsocket		Balance of St	
	Coef.	P>|z|	Coef.	P>|z|	Coef.	P>|z|	Coef.	P>|z|	Coef.	P>|z|	Coef.	P>|
Policy & Administrative Variables Associated With the Family Independence Program:												
FIP Implementation Variable:												
=1 Beginning 3rd qtr 1997, =.67 2nd qtr 1997, =0 Before	0.26	0.03	0.52	0.00	0.41	0.00	0.43	0.00	0.52	0.00	0.26	0
Number of Quarters since FIP Implementation	0.59	0.00	1.09	0.00	0.60	0.00	0.60	0.00	0.46	0.00	0.43	0
Number of Quarters since FIP Implementation Squared	0.14	0.00	0.22	0.00	0.14	0.00	0.12	0.00	0.09	0.00	0.09	0
Client Served by DHS' Newport Office			0.48	0.40			-0.39	0.55			-0.07	0
Client Served by DHS' Pawtucket Office	-0.65	0.28	-0.50	0.39	0.28	0.32	0.14	0.67	0.39	0.40	-0.67	0
Client Served by DHS' Providence Office	-1.39	0.13	0.42	0.50	0.26	0.50	0.44	0.03	-1.52	0.00	-0.31	0
Other Policy & Administrative Variables:												
Rhode Island Minimum Wage	0.61	0.00	1.09	0.00	0.40	0.00	0.60	0.00	0.49	0.00	0.43	0
Binary=1 beginning Jan. 2000--One=One Implementation	0.31	0.21	0.50	0.05	0.51	0.00	0.68	0.00	0.70	0.00	0.27	0
Binary=1 beginning Nov. 1998--RIte Care Coverage for Adults	-0.13	0.11	0.09	0.32	-0.05	0.34	-0.02	0.44	0.00	0.99	0.06	0
Binary=1 if 2 or more children--Higher Earned Income Credit	0.13	0.33	0.21	0.14	-0.10	0.28	0.11	0.02	0.05	0.63	-0.02	0
Max State Reimbursement for Full-Time Care of Preschooler	-0.01	0.07	-0.02	0.00	-0.02	0.00	-0.02	0.00	-0.03	0.00	-0.01	0
Human Capital and Socio-Demographic:												
Binary=1 if Household Head Has 12 or More Years of Education	0.09	0.31	0.27	0.00	0.16	0.00	0.26	0.00	0.15	0.03	0.10	0
Age of Household Head	0.27	0.00	0.30	0.00	0.28	0.00	0.29	0.00	0.20	0.00	0.27	0
Age of Household Head Squared	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Household language is English	-0.13	0.67	0.09	0.82	-0.18	0.26	0.77	0.00	0.51	0.23	0.06	0
Household language is Spanish	-0.80	0.01	-0.98	0.02	-0.70	0.00	0.36	0.02	-0.22	0.62	-0.29	0
Asian	0.03	0.98	0.79	0.15	0.45	0.41	-0.79	0.00	-0.80	0.02	-0.44	0
Black	0.69	0.01	0.37	0.01	0.62	0.00	0.47	0.00	0.41	0.08	0.45	0
Hispanic	0.37	0.09	0.50	0.02	0.42	0.00	0.28	0.00	-0.13	0.56	0.37	0
White	0.36	0.10	0.48	0.00	0.38	0.00	0.18	0.01	0.00	0.98	0.30	0
Binary=1 if Youngest Child is <1 Year Old	0.26	0.08	-0.02	0.88	0.20	0.03	0.12	0.02	0.02	0.89	0.09	0

Explanatory Variables	Random Effects											
	Central Falls		Newport		Pawtucket		Providence		Woonsocket		Balance of St	
	Coef.	P>|z|	Coef.	P>|z|	Coef.	P>|z|	Coef.	P>|z|	Coef.	P>|z|	Coef.	P>|
Binary=1 if Youngest Child is 1 to 3 Year Old	0.03	0.82	0.24	0.07	0.12	0.13	-0.02	0.62	0.09	0.36	0.08	0
Youngest child 5 years old—Kindergarten Eligible	0.07	0.74	0.08	0.72	0.04	0.74	-0.03	0.67	0.11	0.45	-0.10	0
Youngest child 6-12 years old—Elementary School Age	0.24	0.10	0.15	0.32	0.12	0.18	0.07	0.19	0.14	0.20	0.00	0
Youngest child 13-17 yrs old--Middle & Secondary School Age	-0.01	0.97	0.27	0.25	-0.44	0.00	-0.25	0.00	-0.42	0.02	-0.19	0
Number of Disabled Persons in Household	-0.50	0.00	-0.16	0.48	-0.48	0.00	-0.43	0.00	-0.35	0.00	-0.45	0
Head of Household Is Disabled	0.15	0.75	-2.51	0.00	-0.29	0.17	-0.10	0.42	-0.60	0.05	-0.21	0
Head of Household Is Not a US Citizen	0.46	0.00	-0.27	0.45	0.26	0.00	0.10	0.03	-0.21	0.33	-0.06	0
Household Size	-0.09	0.15	-0.03	0.69	-0.08	0.08	-0.09	0.00	-0.03	0.60	-0.06	0
Local Labor Market Conditions:												
Average Monthly Change in # Employed During Quarter (%)	0.06	0.04	0.03	0.00	-0.01	0.41	-0.03	0.00	-0.04	0.12	0.01	0
Time Trends:												
Time Trend Variable =1 (2nd Qtr '96). . . =17 (2nd Qtr 2000)	0.73	0.00	0.96	0.00	0.66	0.00	0.52	0.00	0.31	0.00	0.42	0
Squared Value of Time Trend	-0.14	0.00	-0.23	0.00	-0.14	0.00	-0.12	0.00	-0.08	0.00	-0.09	0
Constant	-8.15	0.00	-10.93	0.00	-7.15	0.00	-8.72	0.00	-5.79	0.00	-7.27	0
Test for Significance of Model												
	$\chi^{2\,(31)}$	342.66	$\chi^{2\,(31)}$	357.60	$\chi^{2\,(31)}$	641.08	$\chi^{2\,(32)}$	2675.33	$\chi^{2\,(31)}$	362.20	$\chi^{2\,(32)}$	1247
	$P>\chi^2$	0.00	$P>\chi^2$	0.00	$P>\chi^2$	0.00	$P>\chi^2$	0.00	$P>\chi^2$	0.00	$P>\chi^2$	0
Sample Characteristics												
Number of Quarters	23652		16166		55267		184579		38115		168768	
Number of Families	1415		974		3321		11008		2314		10221	
Minimum Number of Quarters per Family	1		1		1		1		1		1	
Average Number of Quarters per Family	16.7		16.60		16.60		16.80		16.50		16.50	
Maximum Number of Quarters per Family	17		17		17		17		17		17	

Table 6
Sub-State Areas in Rhode Island
Results for Quarterly Earnings of Current and Former Single-Parent Welfare Families
Earnings from Unemployment Insurance (UI) Records
Study Period: May 1996 to April 2000

Explanatory Variables	Random Effects											
	Central Falls		Newport		Pawtucket		Providence		Woonsocket		Balance of State	
	Coef.	P>|z|	Coef.	P>|z|	Coef.	P>|z|	Coef.	P>|z|	Coef.	P>|z|	Coef.	P>|z|
Policy & Administrative Variables Associated With the Family Independence Program:												
FIP Implementation Variable:												
=1 Beginning 3rd qtr 1997, =.67 2nd qtr 1997, =0 Before	-9.08	0.95	403.31	0.00	-155.73	0.11	127.11	0.02	153.31	0.34	-16.75	0.76
Number of Quarters since FIP Implementation	452.99	0.01	1150.27	0.00	521.87	0.00	270.20	0.00	376.81	0.01	538.21	0.00
Number of Quarters since FIP Implementation Squared	95.55	0.01	182.87	0.00	57.08	0.02	34.68	0.02	69.93	0.02	87.35	0.00
Other Policy & Administrative Variables:												
Rhode Island Minimum Wage	750.10	0.00	1292.89	0.00	694.60	0.00	367.05	0.00	272.37	0.15	675.23	0.00
Binary=1 beginning Jan. 2000--One=One Implementation	834.94	0.01	1953.71	0.00	1476.72	0.00	1521.69	0.00	1197.46	0.00	1391.42	0.00
Binary=1 beginning Nov. 1998--RIte Care Coverage for Adults	66.82	0.52	-140.46	0.25	-16.86	0.81	-95.27	0.02	-128.34	0.24	-64.39	0.11
Binary=1 if 2 or more children--Higher Earned Income Credit	77.35	0.56	31.47	0.83	147.63	0.10	15.23	0.76	41.22	0.71	-59.19	0.27
Max State Reimbursement for Full-Time Care of Preschooler	-15.53	0.10	-61.90	0.00	-33.69	0.00	-51.28	0.00	-40.85	0.00	-39.99	0.00
Human Capital and Socio-Demographic:												
Binary=1 if Household Head Has 12 or More Years of Education	176.25	0.03	280.15	0.00	168.87	0.00	231.73	0.00	108.49	0.10	-3.65	0.91
Age of Household Head	136.40	0.01	246.91	0.00	241.42	0.00	215.92	0.00	99.06	0.01	181.26	0.00
Age of Household Head Squared	-1.71	0.02	-3.29	0.00	-3.07	0.00	-2.72	0.00	-1.05	0.08	-2.23	0.00
Household language is English	-26.89	0.93	1087.58	0.03	-286.16	0.03	-128.07	0.40	-222.85	0.50	-126.11	0.50
Household language is Spanish	-519.94	0.07	665.01	0.16	-677.93	0.00	-593.01	0.00	-591.61	0.09	-263.71	0.28
Asian	691.89	0.00	456.34	0.42	30.76	0.96	306.96	0.01	-220.47	0.59	449.77	0.07
Black	408.88	0.08	-60.50	0.67	226.36	0.12	146.30	0.05	-150.36	0.57	209.12	0.03
Hispanic	333.04	0.05	393.27	0.10	30.02	0.82	138.08	0.05	-239.27	0.36	298.75	0.01
White	493.53	0.01	199.40	0.13	176.86	0.17	134.55	0.06	-150.16	0.54	246.39	0.00
Binary=1 if Youngest Child is <1 Year Old	-88.60	0.49	66.29	0.63	137.17	0.13	126.14	0.01	-3.78	0.97	34.86	0.51
Binary=1 if Youngest Child is 1 to 3 Year Old	29.19	0.81	196.67	0.12	63.48	0.41	63.18	0.14	-10.61	0.91	73.48	0.11

Explanatory Variables	Random Effects											
	Central Falls		Newport		Pawtucket		Providence		Woonsocket		Balance of State	
	Coef.	P>|z|	Coef.	P>|z|	Coef.	P>|z|	Coef.	P>|z|	Coef.	P>|z|	Coef.	P>|z|
Youngest child 5 years old--Kindergarten Eligible	172.05	0.37	305.75	0.09	199.15	0.12	-84.26	0.19	103.07	0.47	243.16	0.00
Youngest child 6-12 years old--Elementary School Age	145.90	0.27	245.29	0.09	-86.43	0.32	-5.06	0.92	117.77	0.30	46.63	0.36
Youngest child 13-17 yrs old--Middle & Secondary School Age	100.91	0.58	118.92	0.53	-342.08	0.01	-73.17	0.30	-268.95	0.11	-41.31	0.61
Number of Disabled Persons in Household	-370.40	0.01	-451.51	0.01	54.22	0.66	-205.83	0.00	-114.03	0.37	-128.59	0.04
Head of Household Is Disabled	-1571.67	0.00	-2786.76	0.00	-1432.51	0.00	-964.80	0.00	-1361.52	0.00	-883.87	0.00
Head of Household Is Not a US Citizen	385.61	0.00	-395.14	0.33	241.89	0.00	125.74	0.00	51.14	0.84	-65.30	0.54
Household Size	-67.20	0.30	-133.88	0.07	-170.81	0.00	-60.50	0.01	-32.32	0.55	-66.06	0.02
Local Labor Market Conditions:												
Average Monthly Change in # Employed During Quarter (%)	121.15	0.00	13.83	0.13	49.81	0.07	-68.43	0.00	-53.73	0.18	7.00	0.32
Time Trends:												
Time Trend Variable =1 (2nd Qtr '96). . . =17 (2nd Qtr 2000)	532.75	0.00	628.08	0.01	257.26	0.04	80.02	0.32	315.75	0.04	414.55	0.00
Squared Value of Time Trend	-99.50	0.01	-181.12	0.00	-64.12	0.01	-26.10	0.10	-64.73	0.04	-88.10	0.00
Constant	-4771.67	0.00	-5859.30	0.00	-3527.64	0.00	-577.93	0.25	1034.65	0.37	-2543.24	0.00
Test for Significance of Model												
	$\chi^{2\,(29)}$	388.65	$\chi^{2\,(28)}$	70097.06	$\chi^{2\,(29)}$	783.34	$\chi^{2\,(29)}$	2305.86	$\chi^{2\,(29)}$	294.03	$\chi^{2\,(29)}$	2347.17
	$P>\chi^2$	0.00	$P>\chi^2$	0.00	$P>\chi^2$	0.00	$P>\chi^2$	0.00	$P>\chi^2$	0.00	$P>\chi^2$	0.00
Sample Characteristics												
Number of Quarters	4886		5511		14236		44687		7165		46516	
Number of Families	925		802		2396		7448		1467		7696	
Minimum Number of Quarters per Family	1		1		1		1		1		1	
Average Number of Quarters per Family	5.30		6.90		5.90		6.00		4.90		6.00	
Maximum Number of Quarters per Family	17		17		17		17		17		17	

Figure 1
Simulation: Estimated Likelihood of Employmentfor a Single-Parent Family of Three

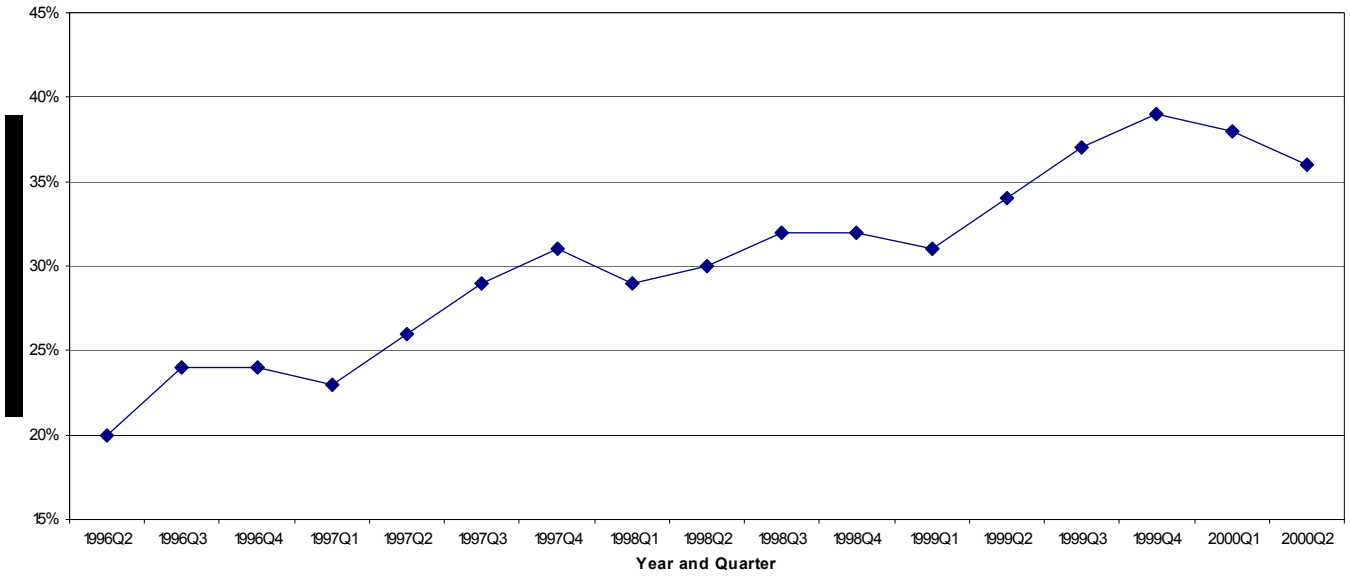

Figure 2
Simulation: Estimated Quarterly Earnings of a Single-Parent Family of Three

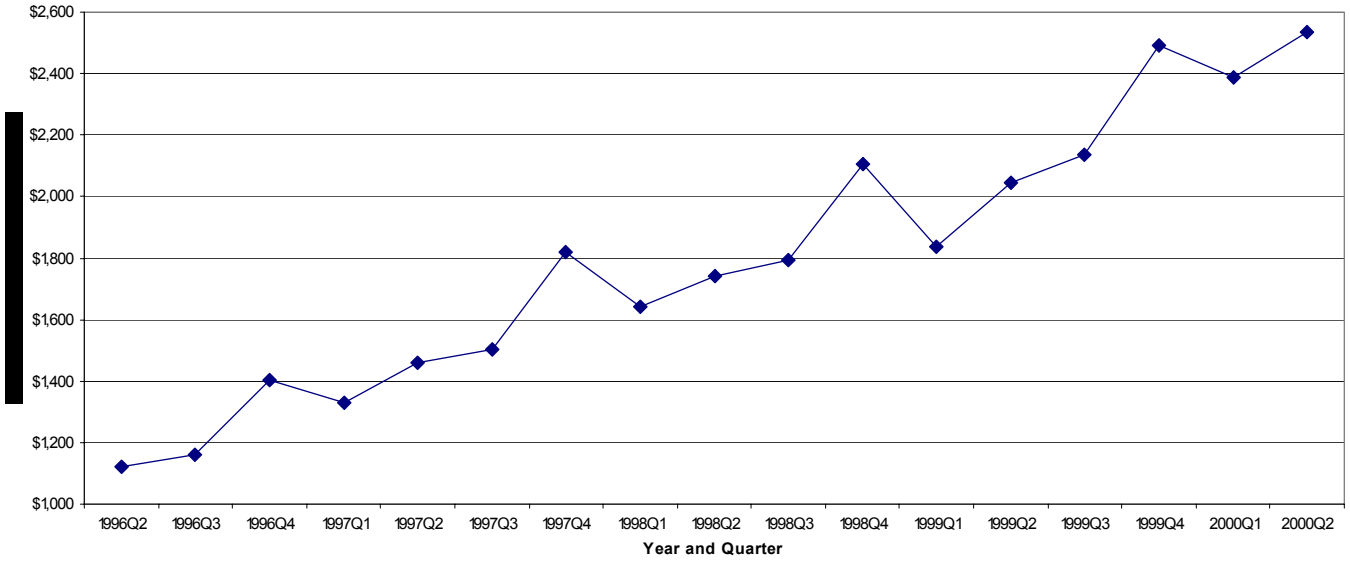

Figure 3
Simulation: Estimated Likelihood of Employment for a Single-Parent Family of Three

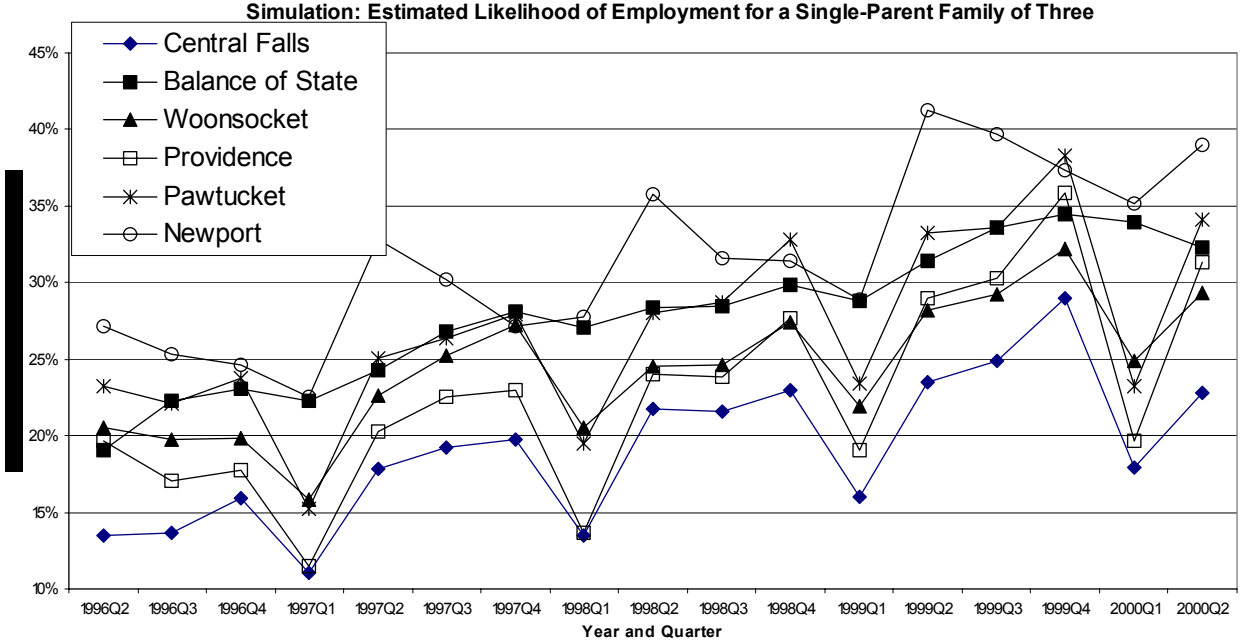

Figure 4
Simulation: Estimated Earnings for A Single-Parent Family of Three

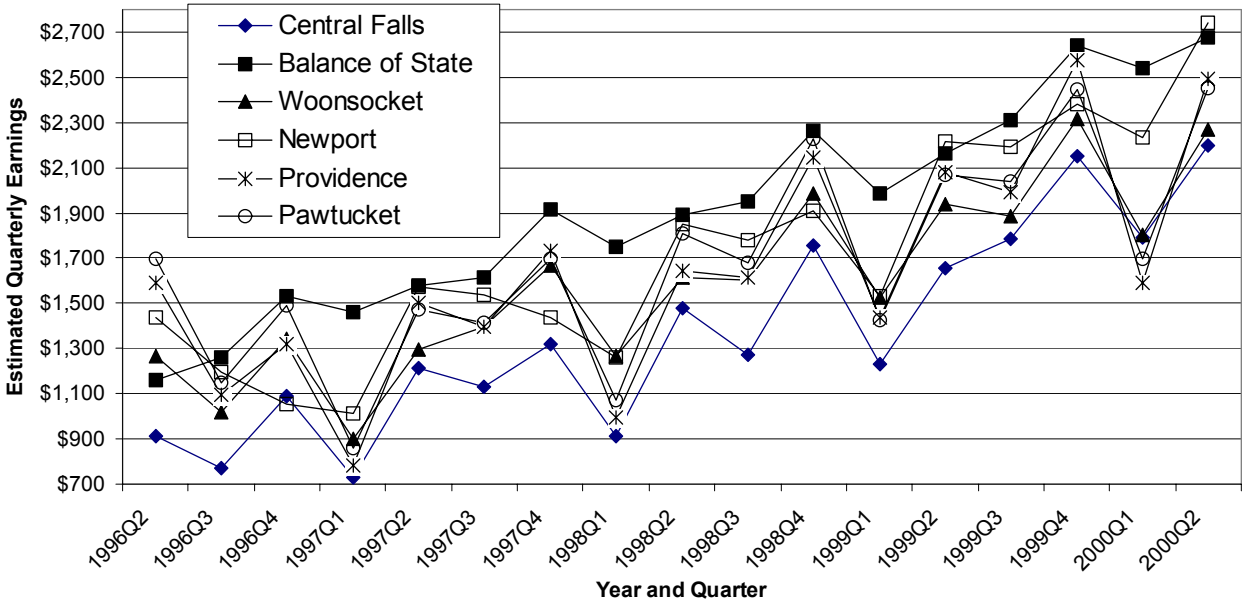

Figure 5
Average Quarterly Change in the Number of People Employed in Providence, Rhode Island